

## INFORMATION SHEET

R5-2009-XXXX  
SETTON PROPERTIES, INC.  
PISTACHIO PROCESSING PLANT NO. 2  
TULARE COUNTY

### Background

Setton Properties (Discharger) has operated a pistachio processing facility in Terra Bella since 1995. In August 2006, the Discharger submitted a Report of Waste Discharge (RWD) for operation of a new satellite plant (Plant No. 2) on Avenue 80 between Roads 184 and 192, approximately eight miles from its existing pistachio processing facility in Terra Bella (identified as Plant No. 1). According to the RWD, Plant No. 2 will receive, hull, dry, and store pistachios. The final processing and packaging will still be done at Plant No. 1.

Plant No. 2 will generate wastewater during a 25-day processing season within a six- to eight-week period between mid-August and mid-October. Wastewater from the hulling and washing process and from the separation float tanks will pass through parabolic filter screens to an aboveground holding tank and pumped to the irrigation system to irrigate 225 acres of pistachio trees owned by the Discharger (Reclamation Area).

Estimated flows for Plant No. 2 will be about 2.0 million gallons per day (mgd).

### Solids Disposal

Immature pistachios as well as screenings, hulls, and empty shells will be collected and hauled to local dairies for use as cattle feed. According to the RWD, other solids such as leaves and twigs removed during the pre-cleaning process will be combined with prunings and disked into the soil of the surrounding pistachio orchards owned by the Discharger or neighboring farms.

### Groundwater Conditions

Regional groundwater in the area is encountered at about 200 feet below ground surface (bgs) and flows to the northwest according to information in Lines of Equal Elevation of Water in Wells in Unconfined Aquifer, published by Department of Water Resources in Spring 2006.

Based on limited groundwater data from water supply wells in the area, background water quality is generally good to excellent, with an EC of 200 to 300 umhos/cm, TDS of 130 to 200 mg/L, and nitrate as nitrogen of < 0.1 mg/L. The Discharger will use water supply wells including domestic and irrigation wells to monitor groundwater in and around Plant No. 2 and its Reclamation Area.

### Basin Plan, Beneficial Uses, and Regulatory Considerations

The Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) designates beneficial uses, establishes numerical and narrative water quality objectives, contains implementation plans and policies for protecting all waters of the basin, and incorporates by reference plans and policies of the State Water Board.

The Basin Plan indicates the greatest long-term problem facing the entire Tulare Lake Basin is increasing salinity in groundwater, a process accelerated by man's activities and particularly

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affected by intensive irrigated agriculture. The Basin Plan recognizes that degradation is unavoidable until there is a long-term solution to the salt imbalance. The Regional Water Board encourages proactive management of waste streams by dischargers to control addition of salt through use, and has established an incremental EC limitation of 500  $\mu\text{mhos/cm}$  over source water or a maximum of 1,000  $\mu\text{mhos/cm}$ , as the measure of the permissible addition of salt constituents through use. Discharges to areas that may recharge good quality groundwater shall not exceed an EC of 1,000  $\mu\text{mhos/cm}$ , a chloride content of 175 mg/L, or a boron content of 1.0 mg/L.

With an average effluent EC greater than 9,000  $\mu\text{mhos/cm}$ , the EC of the discharge significantly exceeds the Basin Plan Limit of source water + 500  $\mu\text{mhos/cm}$  or a maximum of 1,000  $\mu\text{mhos/cm}$ . However, Basin Plan, Chapter 4, Implementation Plan, Industrial Wastewater, allows an exception for food processing industries that discharge to land and exhibit a disproportionate increase in the EC of the discharge due to unavoidable concentrations of organic dissolved solids from the raw food product. It is anticipated that over 30% of the discharge EC is from organic compounds.

The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Regional Water Board will, on a case-by-case basis, consider relevant published criteria to establish numerical limitations in order to implement the narrative objective. With good to excellent quality groundwater and moderately deep well-drained soils (e.g., Exeter loam and Madera loam) the area is suitable for most crop types including sensitive or moderately salt sensitive crops such as beans, grapes, or stone fruit. This Order sets numerical objectives for EC, sodium, and chloride of 700  $\mu\text{mhos/cm}$ , 69 mg/L, and 106 mg/L, respectively, as appropriate numerical limits to implement the narrative toxicity objectives and be protective of all beneficial uses, including irrigation of salt sensitive crops.

### **Antidegradation**

The antidegradation directives of State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality Waters in California," or "Antidegradation Policy" require that waters of the State that are better in quality than established water quality objectives be maintained "consistent with the maximum benefit to the people of the State." Waters can be of high quality for some constituents or beneficial uses and not others. Policy and procedures for complying with this directive are set forth in the Basin Plan.

Constituents of concern include, in part, pH, nutrients, and salts. However, the discharge will likely not cause measurable groundwater degradation, because:

- a. For pH, the limited processing season, required soil sampling, and effective use of lime and/or other soil amendments should preclude the low pH of the discharge from increasing soil acidity or resulting in groundwater degradation.

- b. For nitrogen, the limited processing season and direct application of the wastewater to the Reclamation Area at agronomic rates should preclude groundwater degradation by nitrates.
- c. For salinity, the limited processing season and the fact that a high percentage of the inorganic portion of the discharge EC is from potassium should preclude groundwater degradation for EC.

Potassium is an important nutrient for crops, especially pistachios, and if readily available, plants will take up potassium in excess of their needs. So the discharge of wastewater high in potassium to the pistachio orchard (Reclamation Area) would be beneficial to the crop. Further, while potassium not bound to soil particles is readily soluble in water, the positively charged ion impedes transport through the soil column allowing for greater retention time within the root zone. With a vadose zone of 200 feet, potassium concentrations in groundwater are not expected to increase.

Groundwater monitoring in the vicinity of the discharge from Plant No. 1 has shown no degradation for EC or TDS despite the elevated EC and TDS of its wastewater.

### **Title 27**

Title 27, CCR, section 20005 et seq. (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Title 27 Section 20090(b) exempts discharges of designated waste to land from Title 27 containment standards provided the Regional Water Board has issued waste discharge requirements or waived such issuance; the discharge is in compliance with the Basin Plan; and the waste need not be managed according to Title 22, CCR, Division 4.5, Chapter 11, as a hazardous waste.

Accordingly, the discharge of effluent and the operation of treatment or storage facilities associated with a food processing facility can be allowed without requiring compliance with Title 27, provided the resulting degradation of groundwater is in accordance with the Basin Plan. With containment in an aboveground holding tank and application of wastewater to 225 acres of pistachio trees at agronomic rates the discharge is not anticipated to result in measurable groundwater degradation. Therefore, the discharge authorized by this Order is exempt from Title 27.

## **CEQA**

On 28 February 2006, the Tulare County Resource Management Agency adopted a Negative Declaration (PSP 05-115) for the construction and operation of an agricultural facility to hull, dry, and store pistachios.

The Negative Declaration determined that the project would have a less than significant impact on water quality due to the minimal use of the facility and reclamation of wastewater on the adjoining pistachio orchard, provided the discharge met the requirements established by the Regional Water Board. The Negative Declaration did not include any specific mitigation measures. Regional Water Board staff reviewed and concurs with the general findings in the Negative Declaration and that there would not be a significant impact to water quality.

This Order contains the following specific measures to mitigate any adverse impacts to water quality:

- a) Sets limits for flow, pH, boron, and chloride;
- b) Requires application of wastewater at agronomic rates;
- c) Establishes groundwater limits;
- d) Establishes a monitoring and reporting program; and
- e) Requires preparation of a Wastewater and Nutrient Management Plan and a Salinity Control Plan.

## **Proposed Order Terms and Conditions**

### **Discharge Prohibitions, Effluent Limitations, Discharge Specifications, and Provisions**

The proposed Order prohibits discharge to surface waters and water drainage courses.

The proposed Order would set a maximum daily flow rate of 2.0 mgd, and an annual flow volume of 50 million gallons.

The proposed Order would set a performance based limit for pH such that the median pH of the discharge shall not be less than 4.5 or greater than 9.0 over the course of the processing season. The pH limit is intended to take into account the variability in discharge strength from day to day. The lower pH limit is not expected to contribute to soil acidity in the Reclamation Area due to the limited seasonal discharge. Required soil sampling and effective use of lime and/or other soil amendments as required should mitigate any adverse affects on crops and would be preferable to chemically adjusting the pH of the effluent on a continuous basis.

The proposed Order would prescribe that the application of waste constituents to the Reclamation Area shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system.

The proposed Order would prescribe groundwater limitations based on numeric interpretations of the Basin Plan's water quality objectives for agriculture and set specific limits for EC, boron, chloride, nitrates, and sodium, which would be protective of all beneficial uses, including irrigation of salt sensitive crops. There is no MCL or other numeric limit for potassium other than overall limits for EC and total dissolved solids, to which potassium would contribute. The limitations require that the discharge not cause or contribute to exceedances of these objectives or natural background water quality, whichever is greatest. Groundwater data from the discharge at the existing plant (approximately eight miles away) indicates EC concentrations ranging from 300 to 600  $\mu\text{mhos/cm}$  and that, despite the high EC of the discharge, the Discharger can comply with the groundwater limits.

The proposed Order includes provisions requiring the Discharger to submit a comprehensive Wastewater and Nutrient Management Plan and Salinity Control Plan. The Wastewater and Nutrient Management plan would include set procedures for daily monitoring of the Facility operation and the Reclamation Area during the processing season and an action plan to deal with objectionable odors and/or nuisance conditions. The Salinity Control Plan control would detail measures taken to reduce the salinity of the discharge and identify any additional methods that could be used to further reduce the salinity.

### **Monitoring Requirements**

Section 13267 of the CWC authorizes the Regional Board to require monitoring and technical reports as necessary to investigate the impact of a waste discharge on waters of the state. In recent years there has been increased emphasis on obtaining all necessary information, assuring the information is timely as well as representative and accurate, and thereby improving accountability of any discharger for meeting the conditions of discharge. Section 13268 of the CWC authorizes assessment civil administrative liability where appropriate.

The proposed Order includes effluent monitoring requirements, supply water monitoring, and Recycling monitoring requirements including soil sampling and groundwater monitoring in the Reclamation Area. In order to adequately characterize wastewater, the Discharger is required to monitor for pH, EC, biochemical oxygen demand, total dissolved solids, inorganic dissolved solids, total nitrogen, potassium, and other constituents.

The Discharger must monitor groundwater for waste constituents expected to be present in the discharge, and capable of reaching groundwater, and violating groundwater limitations if its treatment, control, and environmental attenuation, proves inadequate. For each constituent listed in [Section F, Groundwater Limitations](#), of the WDR, the Discharger must, as part of each monitoring event, compare concentrations of constituents found in each monitoring well (or similar type of groundwater monitoring device) to the background concentration or to prescribed numerical limitations to determine compliance.

### **Reopener**

The conditions of discharge in the proposed Order were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. It may be appropriate to reopen the Order if applicable laws and regulations change.

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